

Claims

1. A solid support having an electrostatic layer for electrostatically attracting a nucleic acid molecule and a functional group capable of covalently binding to a nucleic acid molecule on a substrate.
2. The solid support according to claim 1, wherein the surface of the substrate is surface-treated with at least one kind selected from diamond, a soft diamond, a carbonaceous matter and carbide.
3. The solid support according to claim 1 or 2, wherein the electrostatic layer comprises an amino group- containing compound which does not covalently bind to the substrate.
4. The solid support according to claim 1 or 2, wherein the electrostatic layer is composed of an amino group- containing compound which covalently binds to the substrate and the amino group-containing compound has an amino group at the terminus to which the substrate does not bind.
5. The solid support according to any one of claims 1 to 3, which is obtained by depositing a compound having an unsubstituted or monosubstituted amino group and a carbon compound on the substrate and then introducing a functional

group capable of covalently binding to a nucleic acid molecule.

6. The solid support according to any one of claims 1 to 4, which is obtained by dipping the substrate in a solution containing a compound having an unsubstituted or monosubstituted amino group and then introducing a functional group capable of covalently binding to a nucleic acid molecule.

7. The solid support according to claim 6, wherein the compound having an unsubstituted or monosubstituted amino group is polyarylamine.

8. The solid support according to any one of claims 1 to 7, wherein the nucleic acid molecule is DNA.

9. An immobilized nucleic acid molecule, which comprises a nucleic acid molecule immobilized on a solid support according to any one of claims 1 to 8.

10. A method of producing a solid support characterized by depositing a compound having an unsubstituted or monosubstituted amino group and a carbon compound on the substrate and then introducing a functional group capable of covalently binding to a nucleic acid molecule.

11. A method of producing a solid support characterized by dipping the substrate in a solution containing a compound having an unsubstituted or monosubstituted amino group and then introducing a functional group capable of covalently binding to a nucleic acid molecule.

12. A method of immobilizing a primer on a solid support according to any one of claims 1 to 8, hybridizing a nucleic acid molecule to the primer, thereby extending a nucleic acid molecule complementary to the nucleic acid molecule.

13. A method of detecting a nucleic acid molecule, which comprises immobilizing a primer on a solid support according to any one of claims 1 to 8, hybridizing a nucleic acid molecule to the primer, extending a nucleic acid molecule complementary to the nucleic acid molecule in the presence of a labeled nucleic acid and reading a signal derived from the labeled nucleic acid incorporated into the complementary nucleic acid molecule.

14. A method of amplifying a nucleic acid molecule by immobilizing a primer on a solid support according to any one of claims 1 to 8, hybridizing a nucleic acid molecule to the primer and subjecting it to PCR reaction.

15. A method of amplifying DNA by immobilizing a primer on a solid support according to any one of claims 1 to 8, hybridizing DNA to the primer and performing reaction with a strand-displacing DNA polymerase.

16. The method according to claim 13, which further comprises the step of amplifying the nucleic acid molecule after hybridizing a nucleic acid molecule to the primer.